

MATH-1 (18A6): sc-136173

BACKGROUND

The *Drosophila* atonal gene produces a protein with basic helix-loop-helix (bHLH) domains that plays an essential role in the development of the *Drosophila* nervous system. Mammalian atonal homolog 1 (MATH-1) is a helix-loop-helix (HLH) transcription factor that is structurally homologous to the product of the *Drosophila* proneural gene atonal. MATH-1, so known as Atoh1, Ath1 or HATH-1, is a 351 amino acid protein with an atonal-related basic HLH domain. In mice, expression of MATH-1 takes place by embryonic day 9.5 and initially localizes to the cranial ganglions and the dorsal part of the central nervous system. Prominent expression of MATH-1 is in the dorsal part of the central nervous system but becomes restricted to the external granular layer of the cerebellum by day 18 and is undetectable in the adult nervous system. It is suggested that MATH-1 may play a role in the differentiation of subsets of neural cells by activating E box-dependent transcription.

CHROMOSOMAL LOCATION

Genetic locus: ATOH1 (human) mapping to 4q22.2; Atoh1 (mouse) mapping to 6 C1.

SOURCE

MATH-1 (18A6) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 2-189 of MATH-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MATH-1 (18A6) is available conjugated to agarose (sc-136173 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-136173 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-136173 PE), fluorescein (sc-136173 FITC), Alexa Fluor® 488 (sc-136173 AF488), Alexa Fluor® 546 (sc-136173 AF546), Alexa Fluor® 594 (sc-136173 AF594) or Alexa Fluor® 647 (sc-136173 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-136173 AF680) or Alexa Fluor® 790 (sc-136173 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

MATH-1 (18A6) is recommended for detection of MATH-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for MATH-1 siRNA (h): sc-42070, MATH-1 siRNA (m): sc-42071, MATH-1 shRNA Plasmid (h): sc-42070-SH, MATH-1 shRNA Plasmid (m): sc-42071-SH, MATH-1 shRNA (h) Lentiviral Particles: sc-42070-V and MATH-1 shRNA (m) Lentiviral Particles: sc-42071-V.

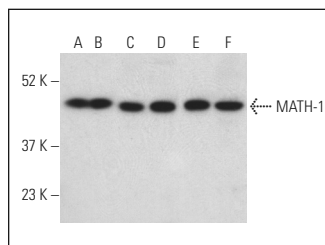
Molecular Weight of MATH-1: 45 kDa.

Positive Controls: C6 whole cell lysate: sc-364373, NIH/3T3 whole cell lysate: sc-2210 or Jurkat whole cell lysate: sc-2204.

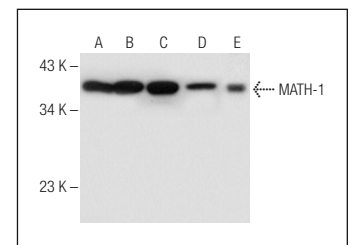
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



MATH-1 (18A6) HRP: sc-136173 HRP. Direct western blot analysis of MATH-1 expression in WEHI-231 (A), KNRK (B), Jurkat (C), C6 (D), PC-12 (E) and T-47D (F) whole cell lysates.



MATH-1 (18A6): sc-136173. Western blot analysis of MATH-1 expression in T-47D (A), PC-12 (B), Jurkat (C) and NIH/3T3 (D) whole cell lysates and human adrenal gland tissue extract (E).

SELECT PRODUCT CITATIONS

- Ying, Z., et al. 2015. Effect of Hath1 on the proliferation and apoptosis of cutaneous squamous cell carcinoma *in vitro*. *Mol. Med. Rep.* 12: 7845-7850.
- Mizoguchi, T., et al. 2019. Impaired cerebellar development in mice overexpressing VGF. *Neurochem. Res.* 44: 374-387
- Li, J., et al. 2020. Dynamic changes in *cis*-regulatory occupancy by Six1 and its cooperative interactions with distinct cofactors drive lineage-specific gene expression programs during progressive differentiation of the auditory sensory epithelium. *Nucleic Acids Res.* 48: 2880-2896.
- Yu, X., et al. 2020. Androgen maintains intestinal homeostasis by inhibiting BMP signaling via intestinal stromal cells. *Stem Cell Reports* 15: 912-925.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.